

FIG. 1A

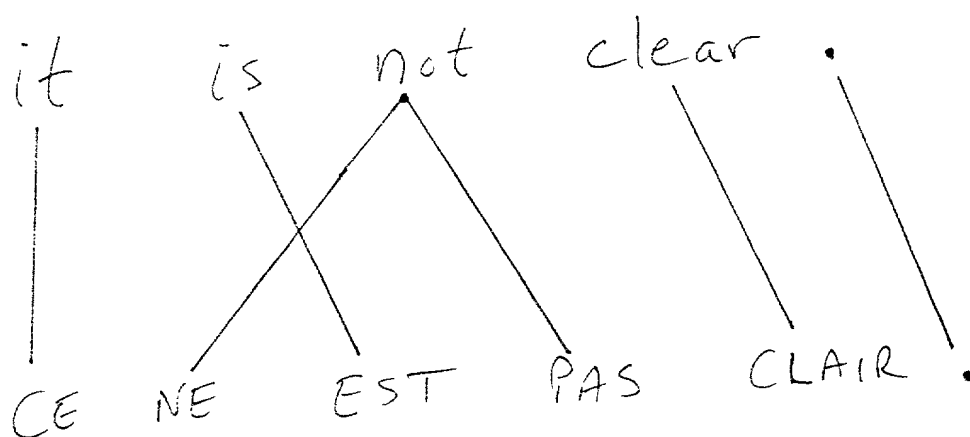


FIG. 1B

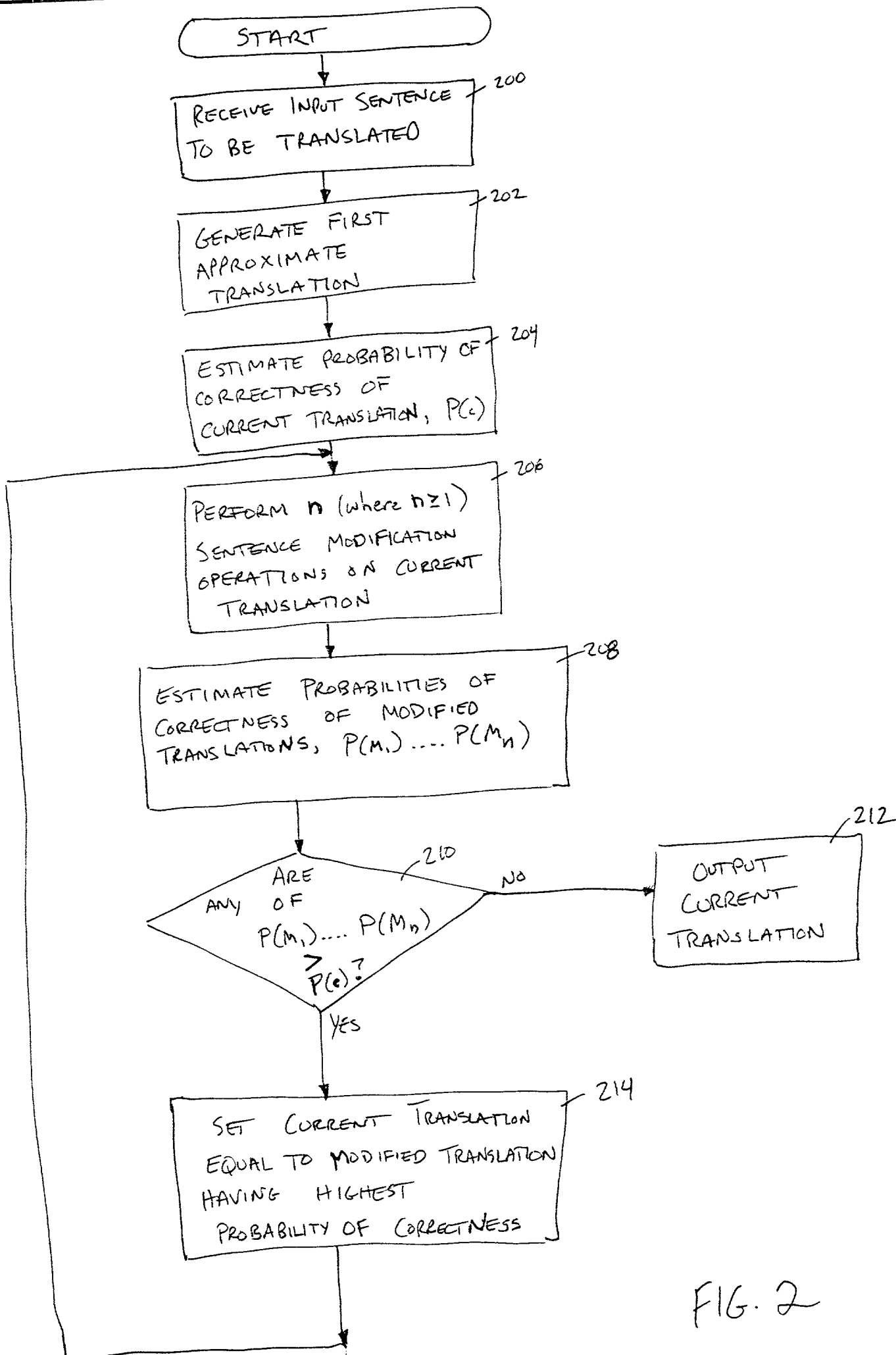


FIG. 2

Action

NULL well heard , it talking a beautiful victory .

bien entendu , il parle de une belle victoire .

translateTwoWords(5,talks,7,great)

NULL well heard , it talks a great victory .

bien entendu , il parle de une belle victoire .

translateTwoWords(2,understood,0,about)

NULL well understood , it talks about a great victory .

bien entendu , il parle de une belle victoire .

translateOneWord(4,he)

NULL well understood , he talks about a great victory .

bien entendu , il parle de une belle victoire .

translateTwoWords(1,quite,2,naturally)

NULL quite naturally , he talks about a great victory .

bien entendu , il parle de une belle victoire .

FIG. 3

ITERATION 1

ce ne est pas juste .
that not is not fair .
Aprob = 1.13162e-22 LMprob = 2.98457e-14 TMprob = 3.79156e-09

ITERATION 2

Change not -> ne to is -> ne
ce ne est pas juste .
that is is not fair .
Aprob = 9.95934e-19 LMprob = 8.65626e-10 TMprob = 1.15054e-09

ITERATION 3

Increase fertility. Change is -> est to is -> est
ce ne est pas juste .
that is not fair .
Aprob = 2.65104e-16 LMprob = 5.05036e-06 TMprob = 5.24921e-11

ITERATION 4

Change that -> ce to it -> ce
ce ne est pas juste .
it is not fair .
Aprob = 3.82599e-16 LMprob = 6.63863e-06 TMprob = 5.76322e-11

FIG. 4

sent length	decoder type	time (sec/sent)	translation errors (semantic and/or syntactic)
6	stack	13.72	42
6	greedy	1.58	46
6	greedy*	0.07	46
8	stack	45.45	59
8	greedy	2.75	68
8	greedy*	0.15	69
10	stack	105.15	57
10	greedy	3.83	63
10	greedy*	0.20	68
15	stack	>2000	74
15	greedy	12.06	75
15	greedy*	1.11	75
15	greedy ¹	0.63	76
20	greedy	49.23	86
20	greedy*	11.34	93
20	greedy ¹	0.94	93

FIG. 5

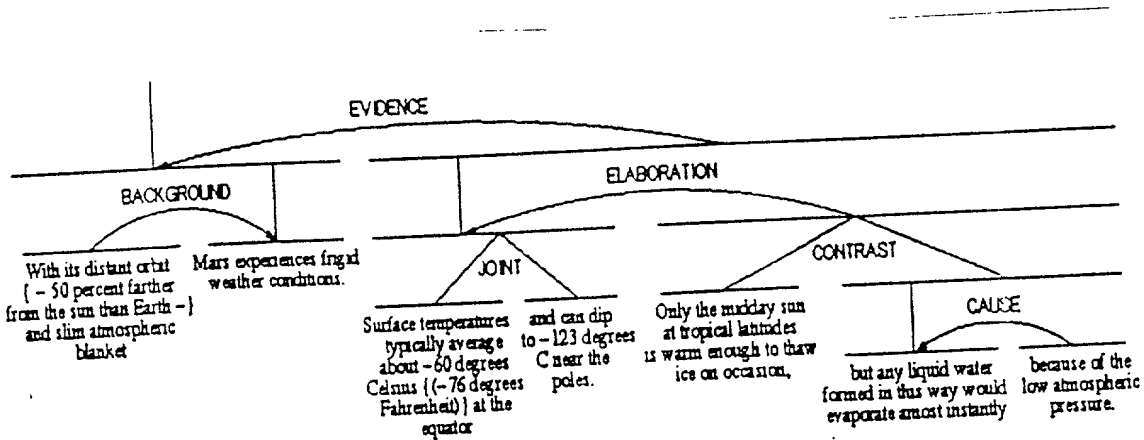


FIG. 6

[厚生省が昨年公表した^{1]}
[人口の将来推計では、^{2]}
[将来、一・四九九人を最低に、^{3]}
[その後は上昇に転ずると^{4]}
[推計していたが、^{5]}
[早くも予想がはずれる^{6]}
[見通しとなった。^{7]}

FIG. 7

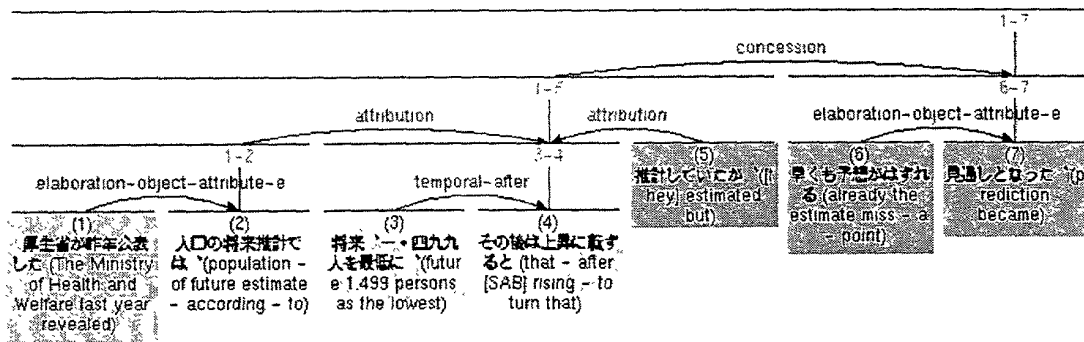


FIG. 8

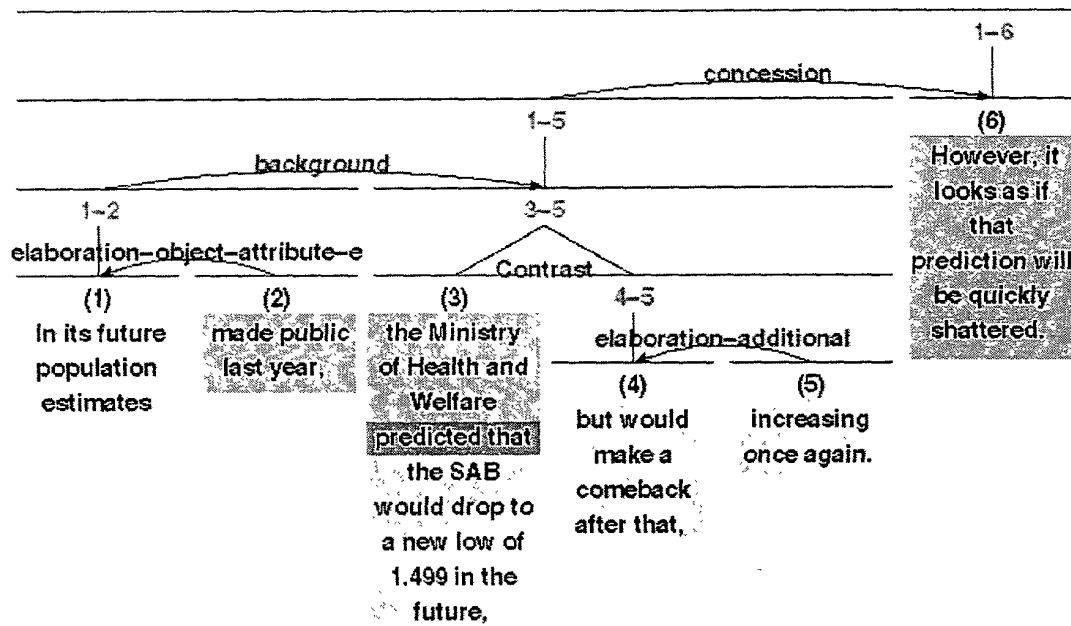


FIG. 9

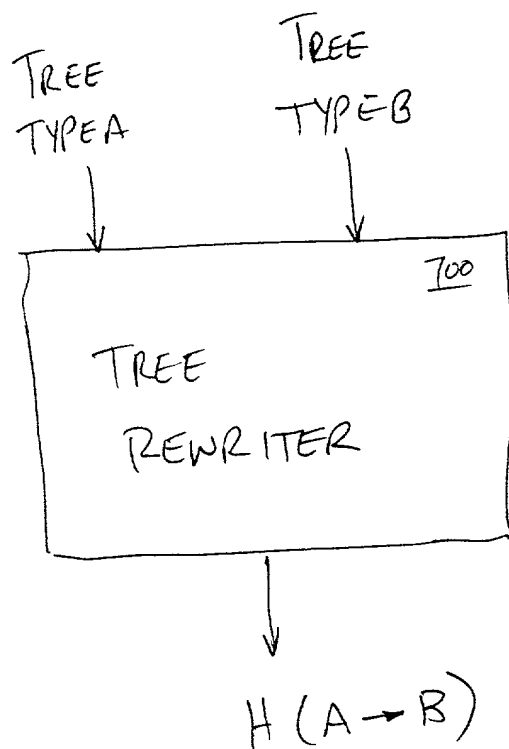


FIG. 10

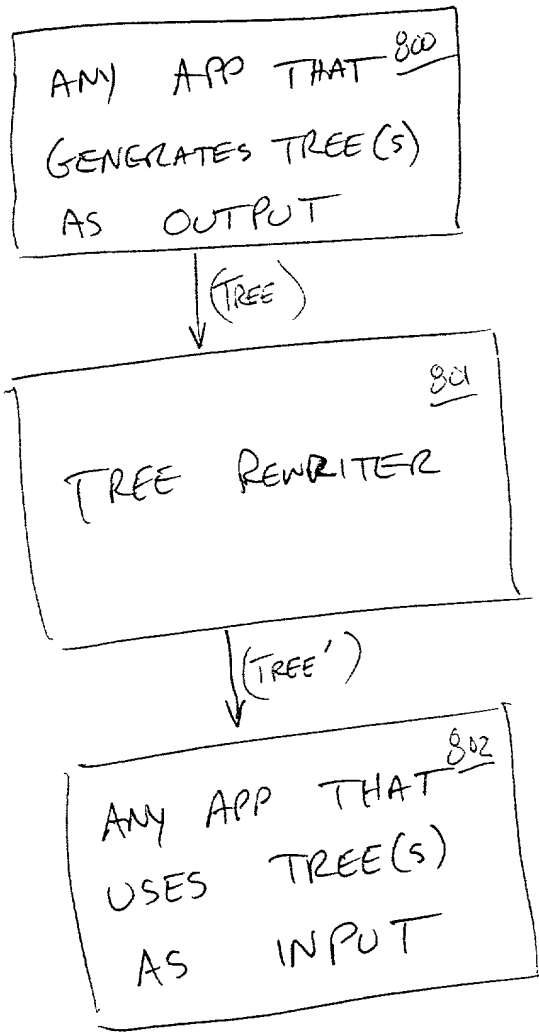


FIG. 11

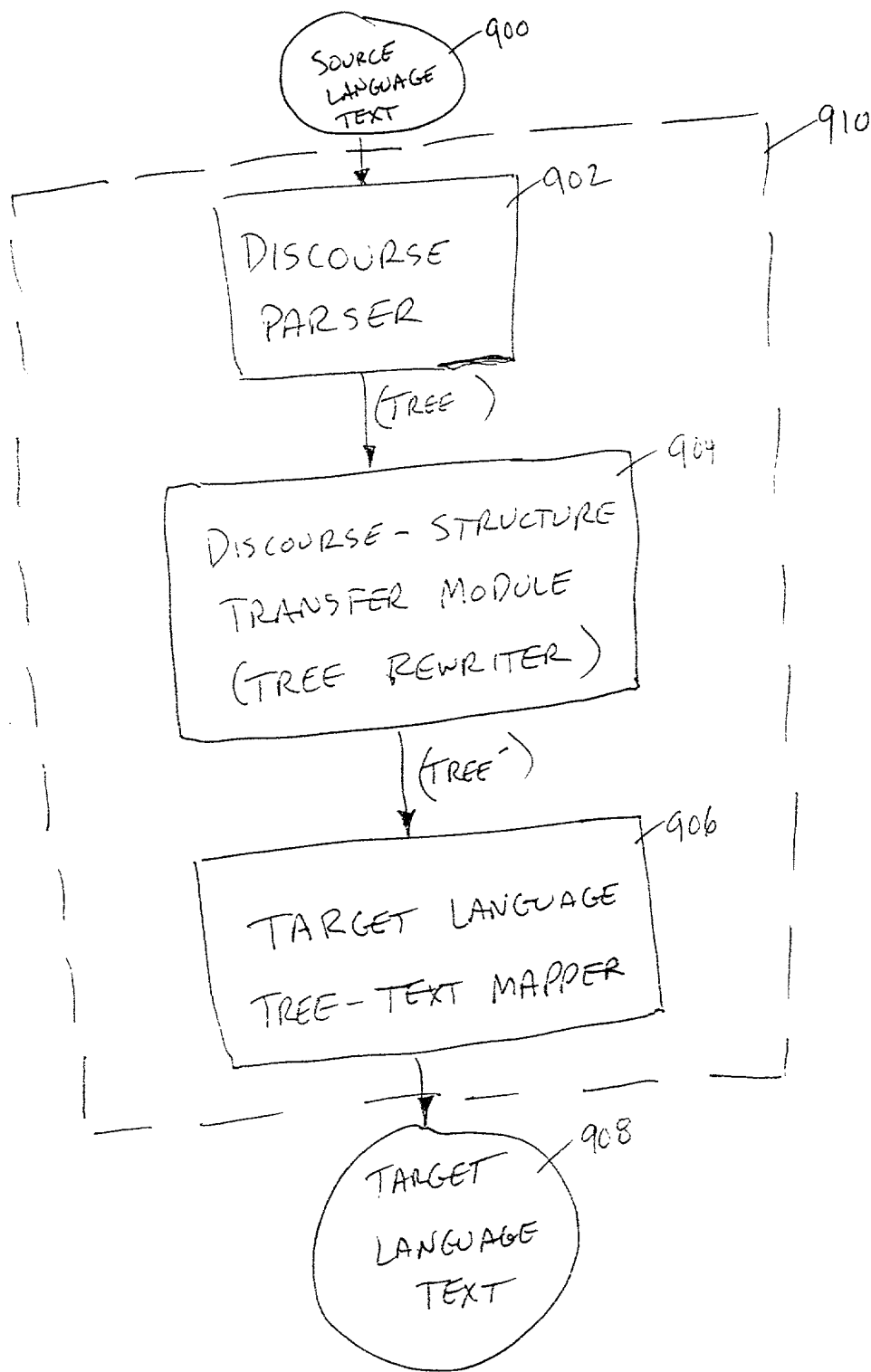


FIG. 12

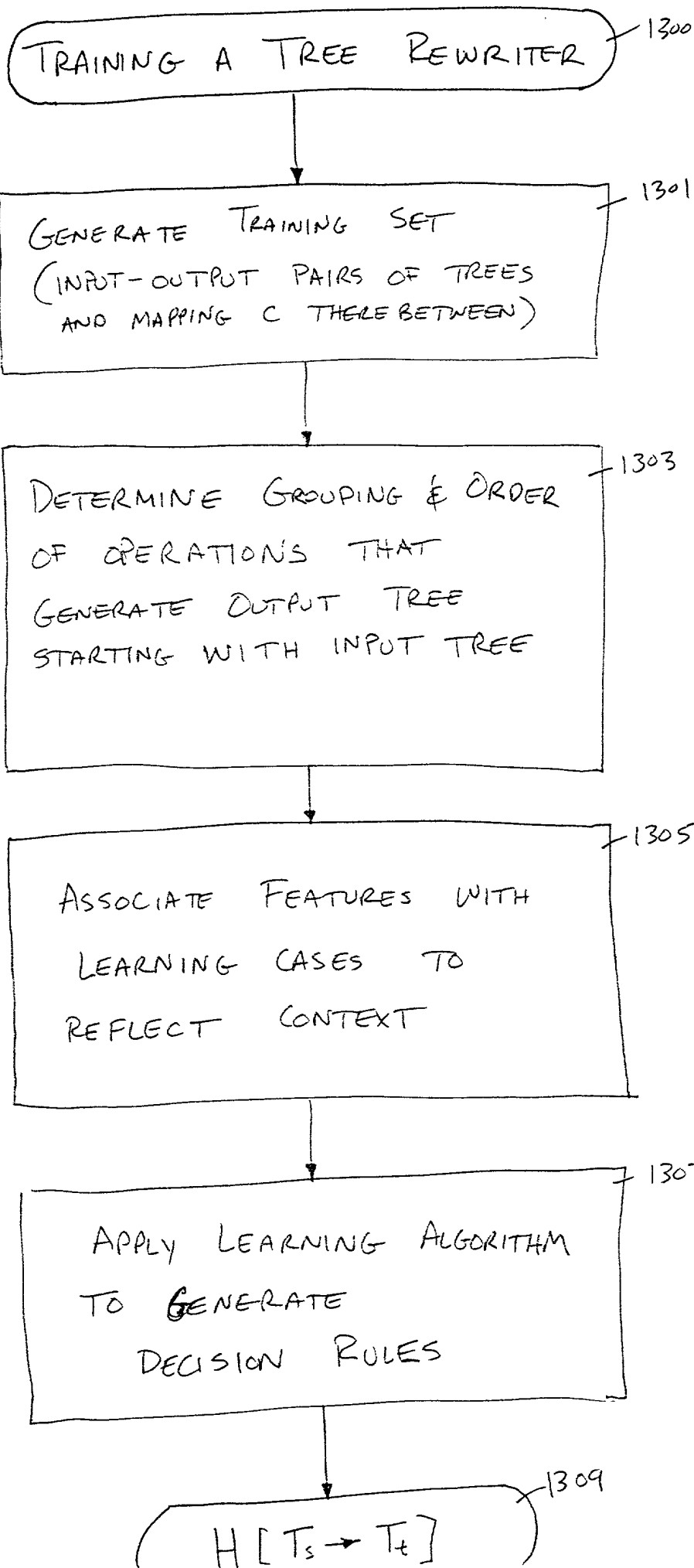


FIG. 13

STACK

INPUT LIST

BREAK 2

SWAP 2

SHIFT

SHIFT

REDUCE-NS-ELABORATION-OBJECT-ATTRIBUTE-E

SHIFT; SHIFT

FUSE

SWAP 2; SHIFT; FUSE

BREAK 2; SHIFT; SHIFT

REDUCE-NS-ELABORATION-ADDITIONAL

REDUCE-NN-CONTRAST

REDUCE-SN-BACKGROUND

ASSIGN TYPE SENTENCE

ELABORATION_OBJECT_ATTRIBUTE_E
2 1''

ELABORATION_OBJECT_ATTRIBUTE_E

2 1'' 1' 3
2 1'' 1', 3

ELABORATION_OBJECT_ATTRIBUTE_E

ELABORATION_OBJECT_ATTRIBUTE_E

ABORATION_OBJECT_ATTRIBUTE_E

2 1'' 1', 3, 5 4''

ABORATION_OBJECT_ATTRIBUTE_E, ELABORATION-ADDITIONAL
2 1'' 4' 4''

BORATION_OBJECT_ATTRIBUTE_E

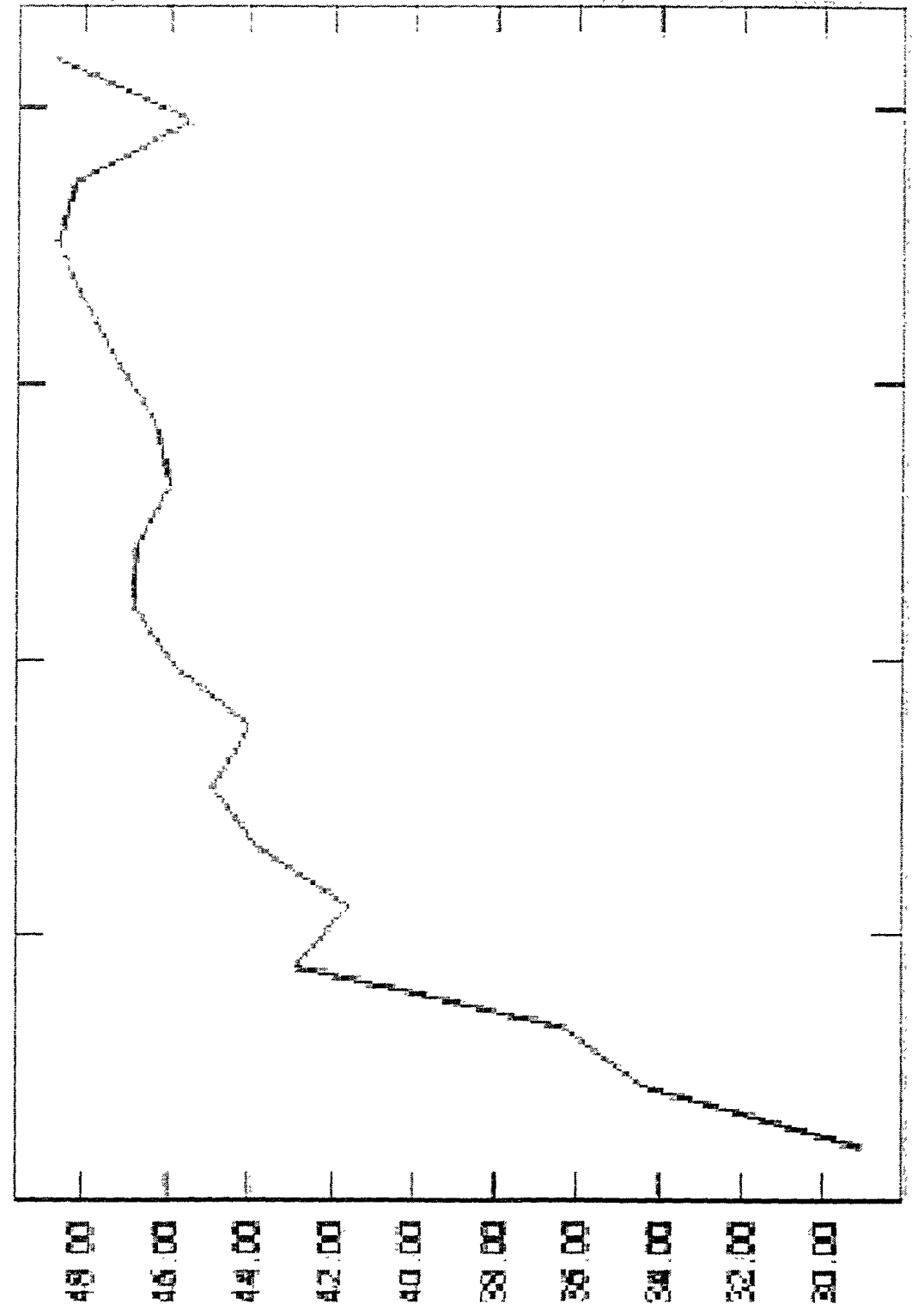
2 1'' 1', 3, 5 4' 4''
CONTRAST
ELABORATION-ADDITIONAL

ORATION_OBJECT_ATTRIBUTE_E
2 1'' 1', 3, 5 4' 4''
BACKGROUND
CONTRAST
ELABORATION-ADDITIONAL

Fig. 14

The following data were obtained from the analysis of the sample
 by the method described in the preceding section.

Accuracy %



Relative Retention

Concentration $\times 10^3$

Fig. 15